

REMARKS

Claims 1 and 4-6 are pending in this application, of which claims 1 and 4-5 have been amended and claim 6 has been added.

The Examiner has rejected the claims as follows:

1. Claim 1 under 35 U.S.C. §103(a) as unpatentable over **Kusase, et al.** (previously cited) in view of U.S. Patent 6,617,715 to Harris et al. (hereinafter "**Harris, et al.**"), U.S. Patent 6,396,177 to Shin, et al. (hereinafter "**Shin, et al.**") and J.P. Patent Application 59230448A to Ito (hereinafter "**Ito**");
2. Claim 2 under 35 U.S.C. §103(a) as unpatentable over **Kusase, et al.** in view of **Harris, et al.**, **Shin, et al.** and U.S. Patent 6,091,172 to Kakinuma, et al. (hereinafter "**Kakinuma, et al.**"); and
3. Claims 3-5 under 35 U.S.C. §103(a) as unpatentable over **Kusase, et al.** in view of **Harris, et al.**, **Shin, et al.**, **Ito**, **Kakinuma, et al.** and J.P. Patent Application 360118036A to Kamiyama (hereinafter "**Kamiyama**").

Applicant respectfully traverse these rejections.

Kusase, et al. discloses a vibration damping generator motor for a vehicle. A pulley 10 fits over the end part of a crank shaft 2 projecting from a housing 1. A coupling board 15 for coupling a boss 12 having a key way 11 with a substantially short tubular rim 14 having a groove part 13

comprising a plurality of grooves for entraining a belt has a curved cross-section which recedes from the housing 1 between the boss 12 and the rim 14 thus forming an annular recessed space S on the housing 1 side. A substantially annular protruding wall 20 projects from the housing 1 into the recessed space S on the inside of the rim 14 and a stator yoke 21 fits over the protruding wall 20 and is secured through bolts 22 to the protruding wall 20. An annular iron rotor yoke 16 fits in the rim 14 and is secured to the pulley 10 through a caulked part 14a on the inner peripheral end face of the rim 14.

Fig. 1 of Kusase, et al. shows air inlet holes 15a arranged in the outer face of the coupling board 15 of pulley 10, which faces away from the engine (not shown).

Harris, et al. discloses an automotive alternator including an inner housing assembly, an outer housing assembly mounted over the inner housing assembly, and an internal plate mounted within the outer housing assembly. The inner housing assembly, the outer housing assembly, and the internal plate define a sealed flow chamber. The flow chamber includes an inlet reservoir and an outlet reservoir located adjacent a first end, and a cross over reservoir located adjacent a second end. The inner housing assembly includes a plurality of radially extending axial fins. The fins extend outward from the sleeve toward the outer housing to define a plurality of axial flow channels.

Shin, et al. discloses a rotor structure for an outer rotor-type brushless motor. The structure of the rotor for the brushless motor includes: a steel plate frame provided with a base plate unit in a disc shape having a plurality of insertion holes at its center portion, a plurality of radiation holes being formed at a circumferential portion of the insertion holes, a plurality of blades being formed

at side portions of the radiation holes by cutting: a back yoke unit curved and extended in the upward direction, having a predetermined height at the circumferential portion of the base plate unit; and a radius-direction enhancing unit formed at the upper end portion of the back yoke unit; one or a plurality of ring type permanent magnets fixedly connected to the inner side portion of the back yoke unit; a connecting member inserted into the insertion hole positioned at the center, and connected to the steel plate frame; and a fixing unit fixing a driving shaft inserted into the connecting member and connected to the other constitutional elements. Blades 517 are arranged on the outer face of pulley 510.

Ito discloses a generator having an internal cooling structure. One end of a rotational shaft 1 is secured by bolts 5 to a crankshaft 4 of an engine, and the other end is supported through a bearing 6 to a rear frame 2. A bobbin 7 is secured onto the shaft 1, a stator core 8 is secured to the bobbin 7, and a rotor winding 9 is wound on the core 8. The reinforcing ribs formed on the outer peripheries of the both ends of the bobbin 7 are extended radially and axially to be formed in blade shape. When the bobbin 7 is secured to the shaft 1, the ribs perform the function as a cooling fan 13 to generate cooling air in the generator to flow in the rotational shaft direction.

Kakinuma, et al. discloses an outer rotor-type multi-pole generator including a plurality of coils wound around a large number of protruding poles provided around an outer periphery of a stator core through a bobbin, and terminal members fitted into fitting tube portions integrally provided on the bobbin to pass through the stator core over opposite ends of the stator core.

Kamiyama, et al. has been cited for teaching a guide fin 133 acting as a cover for air gap A which projects from the upper end of stator coil 12 and faces an air inlet passage B for effective cooling of the coils.

None of the cited references, especially Shin, et al. which teaches blades 517 arranged on the outer face of the pulley 510, can be combined with Kusase, et al. to teach the present invention, because it is not possible to utilize the blades on the outer face of the pulley to pull in air from the same outer face of the pulley. This is because the air pulled in would completely bypass any internal structure in its journey from inlet to blade.

Furhermore, concerning Harris et al., the Examiner urges that in Fig. 1, the fan blades face the engine and face away from the engine in order to remove heat from the alternator. Applicant does not understand this statement. Moreover, in Fig. 1 belt driven pulley 20 receives drive force from engine crankshaft via belt wrapped around the pulley, as disclosed in col. 1, lines 15-19. No structural relationship can therefore be determined between fan 22 and an engine, which is not shown. Thus, Applicant finds no support for the Examiner's assertion.

Also, regarding Shin et al., the Examiner urges that in Fig. 4B, the blades 517 are facing away from the engine. Column 2, lines 25-29 suggests that the driving shaft 400, on which the frame 510 having fan blades 517 is fixed, is connected to the inner casing of the washing machine for transmitting the drive force to that machine. No relation with an engine is taught there on the shaft 400. Again, Applicant finds no support for the Examiner's assertion.

Furthermore, in discussing Ito, the Examiner refers to element 8 in Fig. 4 as a “stator core.” However, element 8 is a rotor core fixed on the crankshaft 4 and another element 10 is a stator core.

Thus, the 35 USC §103(a) rejections should be withdrawn.

Claim 6 is newly-added and specifies the structural relationship of elements defining the air flow through the motor/generator according to the present invention, . It should be noted that the direction of air flow through a motor/generator defined in this claim is contrary to that shown in Kusase et al. Moreover, it is respectfully submitted that the references do not clearly teach or suggest the feature added to the last portion of the claim, *i.e.*, “air flow regulating means is provided at least at one axial end of the outer periphery of the stator for suppressing entry of air, that has been guided through the air inlet passage, into said air gap.” Such air flow regulating means is typically shown by elements 36a (Fig. 3); 36b (Fig. 5); and 36c (Figs. 6 and 7).

In view of the aforementioned amendments and accompanying remarks, claims 1 and 4-6, as amended, and are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Amendment Under 37 CFR 1.111
U.S. Patent Appln. Serial No. **09/865,514**
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In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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